

## **GB2089326**

**Publication Title:**

Container formed from hinged panels

**Abstract:**

**Abstract of GB2089326**

A container 10 comprises body components 11 joined together in a pivotal manner along adjoining edges and end walls which hold the body structure in a stable erect condition. Joining of the components 11 is preferably effected by means of silicone-based adhesive strips 12 and the end walls comprise frames 16 and end plates 18. A removable lid panel 14 may bear a handle 15.

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GB 1119712.

GB 844723

GB 740413

(58) Field of search  
B8P

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## (54) Container formed from hinged panels

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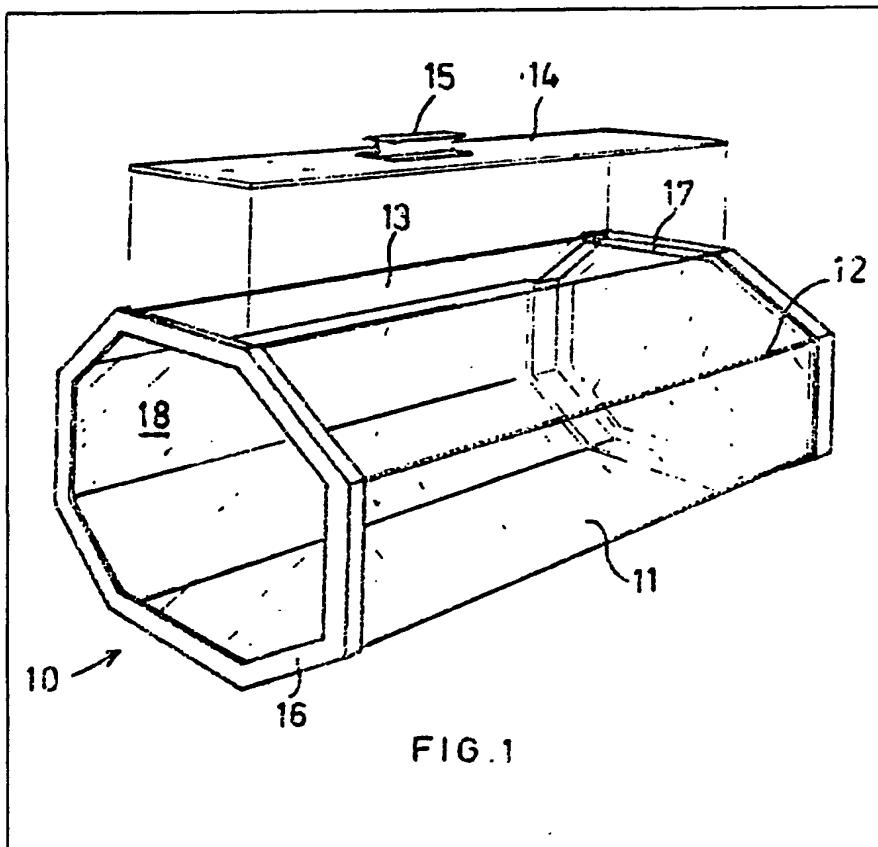


FIG. 1

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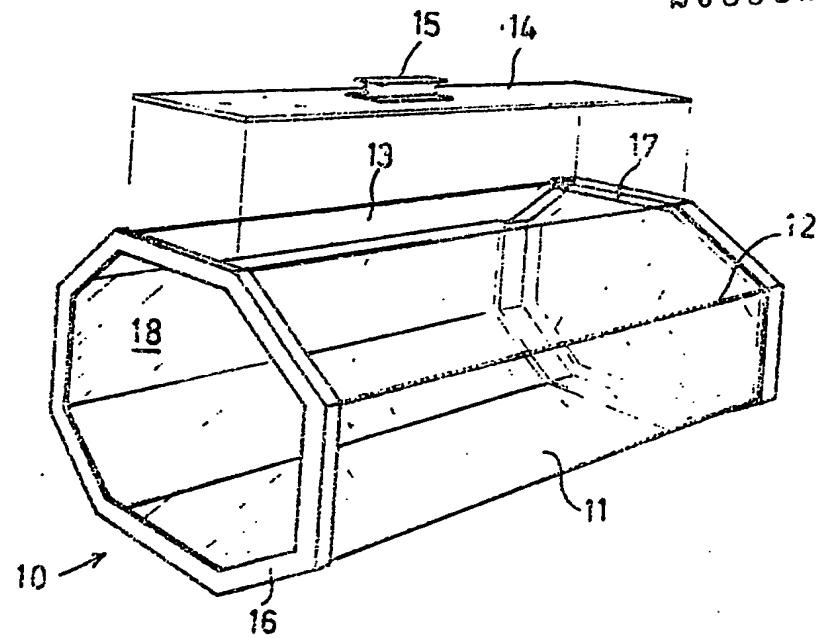


FIG. 1.

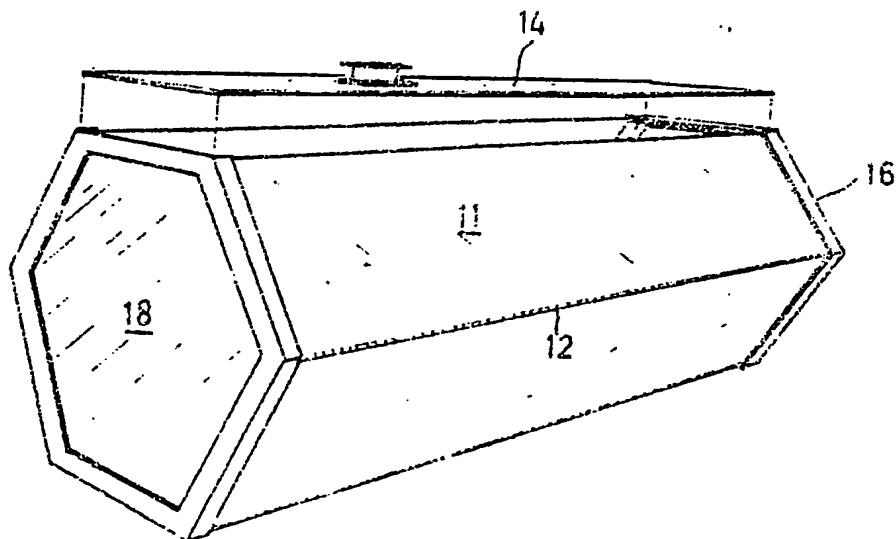


FIG. 2.

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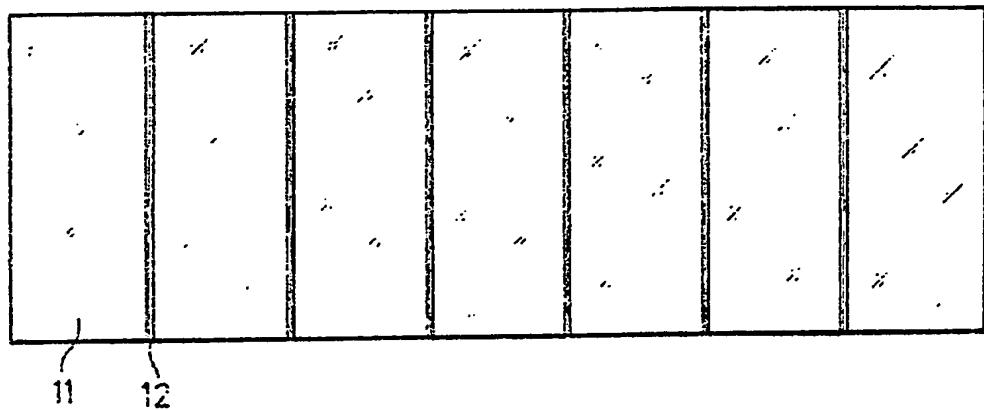


FIG. 3.

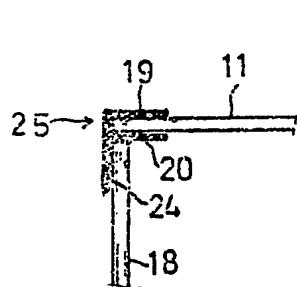


FIG. 4

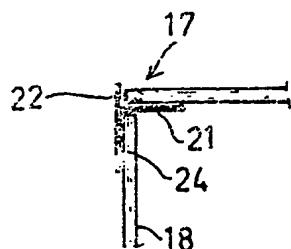


FIG. 5.

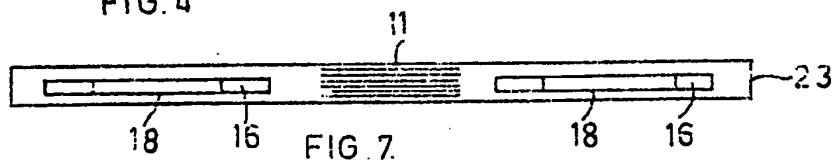


FIG. 7.

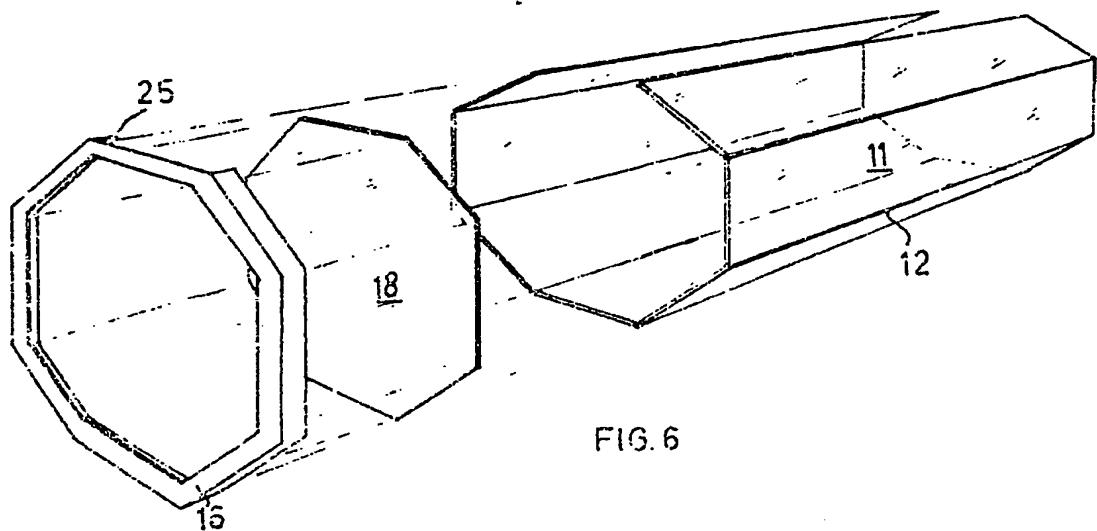


FIG. 6

**SPECIFICATION****Container and method of manufacture****5 BACKGROUND OF THE INVENTION****(1) Field of the invention**

This invention relates to a container and method of manufacture of a container from a plurality of body components.

**10 (2) Description of the prior art**

Hitherto container manufacture, particularly in relation to containers formed from a plurality of body components such as panels or plates, has been a time consuming exercise

**15** especially when the panels were formed from a clear or transparent material such as glass. Thus often specially designed moulds were required which were relatively expensive or special sealing techniques were required in which to attach adjacent panels to each other.

**BRIEF SUMMARY OF THE INVENTION**

**25** It is an object of the invention to provide a method of manufacture of a container formed from a plurality of body components which is efficient in operation, relatively inexpensive and which may be carried out relatively quickly.

**30** It is a further object to provide a container formed from a plurality of body components when manufactured by the above mentioned method.

The method of the invention includes the following steps:

**35** (i) obtaining a plurality of container body components and attaching adjacent body components to each other by applying bonding agent to adjoining edges whereby each of the body components may be pivotally attached to each other along their adjoining edges;

**40** (ii) aligning an assembly of body components into at least a part tubular orientation wherein each body component forms a part of 45 a side wall of the said at least partly formed tube;

**45** (iii) attaching end components to the open ends of the said at least partially formed tube so as to stabilize the said at least partially formed tube and thus form a stable container structure.

Preferably each body component is formed from panels or plates which are flat and suitably rectangular. However this is not essential and the plates may be arcuate or adopt some other suitable configuration.

**55** In step (i) a bonding agent such as suitable silicone based adhesive may be utilized wherein the adhesive is applied to the adjoining edges of a plurality of panels which are preferably formed from transparent or clear material and thus are suitably glass panels. The adhesive is preferably such that it dries quickly. The panels may be laid out on any suitable support surface with adjoining edges

of each panel being spaced from each other by relatively narrow gap.

After drying of the adhesive these may form pivot strips thus allowing adjacent panels to

**70** be bent relative to each other to form the partly tubular structure formed in step (ii). If desired instead of a part tubular structure a complete tubular structure having a continuous side wall may be formed. However this is **75** disadvantageous in that it requires one pair of adjoining edges to be sealed or otherwise attached to each other in step (ii). Thus a part tubular structure is preferred tube formed in step (ii).

**80** Next end components are attached to the opposed open ends of the part tubular structure. Preferably these end components may include a peripheral frame which has a retaining groove for the end edges of each panel

**85** forming the part tubular structure. The peripheral frame may be polygonal such as hexagonal, rectangular or even triangular in shape. The peripheral frame may have had previously attached thereto an end plate or panel so as **90** to completely enclose or cover the opposed open ends of the part tubular structure. In this embodiment the peripheral frame has a continuous groove located on the inner surface so as to accommodate the end plate which may **95** be bonded therein if desired.

The part tubular structure suitably has one open portion which may be covered by a lid or cover plate which may be retained in appropriate recesses in the peripheral frames **100** of each end plate.

**BRIEF DESCRIPTION OF THE DRAWINGS**

References is now made to a preferred embodiment of the invention as shown in the **105** accompanying drawings wherein:

*Figure 1* is a perspective view of a container formed by the method of the invention;

*Figure 2* is a similar view as shown in Fig. 1 with the cover plate about to be applied to **110** an open portion of the container;

*Figure 3* is a schematic view illustrating step (i) of the method of the invention;

*Figure 4* is a detailed view of the attachment of the body plate to an adjacent peripheral frame;

*Figure 5* is a detailed view of the means of attachment of the cover plate to an adjacent peripheral frame;

*Figure 6* is an exploded view of the part tubular structure, peripheral frame and end plate of the container of Fig. 1 thereby illustrating steps (ii) and (iii) of the method of the invention; and

*Figure 7* is a view showing how the components of the container formed by the method of the invention may be readily collapsed and folded in a convenient "flat pack" for transportation and storage.

**130 DETAILED DESCRIPTION OF THE PRE-**

**FERRED EMBODIMENT**

In the drawings there is shown container 10 formed by body panels 11 which are attached to each other by pivot strips 12 5 which may be formed from a suitable glass to glass or glass-to-plastics silicone based adhesive. There is also shown an open portion 13 of the container 10 which may be covered by lid or cover plate 14. Suitably each panel 11 10 is identical as is also cover plate 14 which has handle 15 attached thereto. There is also shown peripheral frames 16 having retaining recesses 17 for cover plate 14.

Fig. 3 shows the initial step of the method 15 of the invention as described above wherein panels 11 are laid out flat on a suitable supporting surface in a side by side relationship and having adjacent side edges attached by adhesive strips 12.

Fig. 4 shows how body or side plate 11 20 may be supported in a groove or recess 25 having opposed flanges 19 and 20 whereas in Fig. 5 recess 17 for cover plate 14 has only one support flange 21 and upwardly 25 extending flange 22. Figs. 4 and 5 also show groove 24 for accomodating end plates 18.

Fig. 6 illustrates method steps (ii) and (iii) 30 as described above and showing how peripheral frame 16, end plate 18 and the partly formed tubular structure are attached to each other. Preferably however the end plates 18 are already attached to frames 16 before being attached to the part tubular structure or shell formed by hand manipulation of panels 35 11. However this is not essential. Peripheral frame 16 also includes a U-shaped retaining groove 25 for side plates or body plates 11.

Fig. 7 shows how the components of the 40 container may be folded and packed in a "flat pack" 23 or elongate case for assembly the user who will then suitably assemble each component of the container as described previously. Suitably the container may be easily 45 demounted and collapsed and packed away for transportation and storage when required.

Suitable silicone based adhesives for use in the invention are SILGLAZE "2400 Sealant" manufactured by General Electric Company and "SILICONE CONSTRUCTION 1200 Sealant" 50 also manufactured by the General Electric Company.

**CLAIMS**

1. A method of forming a container including the steps of: 55 (i) obtaining a plurality of container body components and attaching adjacent body components to each other by applying bonding agent to adjoining edge portions whereby 60 each of the body components may be pivotally attached to each other; (ii) aligning an assembly of body components into at least a partly formed tubular structure whereby each body component may form part of a side wall 65 of said at least partly formed tubular structure;

and (iii) attaching end components to the open ends of the said at least partly formed tubular structure to stabilize said at least partly formed tubular structure and thus form 70 a stable container.

2. A method as claimed in claim 1 wherein said tubular structure is partly formed and includes an open portion adapted to be closed by a cover component or lid of the 75 container.

3. A method as claimed in claim 2 wherein the end components include a peripheral frame having attached thereto an end plate, said peripheral frame including an accommodating recess for the cover plate, said peripheral frame also having a retaining groove so as to receive an associated end of a respective container body component.

4. A container having a body portion 80 formed from a plurality of body or side panels having adjacent side edges connected to each other by a pivot strip and having opposed end members each comprising a peripheral frame for releasably accommodating adjacent ends

90 of each body panel, said end members also including an end plate attached to an associated peripheral frame, there also being provided an open portion in the container body for retention therein of a cover plate, the 95 construction and arrangement being such that each end member may be disengaged from the body portion of the container and said body portion being collapsible whereby the components of the container including the 100 body portion and the end members may be retained, if desired, in an elongate case for transportation or storage.

5. A method of forming a container substantially as hereinbefore described with reference to the accompanying drawings.

6. A container substantially as hereinbefore described with reference to the accompanying drawings.

## Sharon DeMesones

---

**From:** Stephanie M. Bodamer on behalf of Nokia Admin - Others  
**Sent:** Thursday, July 26, 2007 11:46 AM  
**To:** Sharon DeMesones  
**Cc:** Bradley Wright; Josephine Lee; Victoria van de Veerdonk; Jessica Williams; Stephanie M. Bodamer  
**Subject:** RE: Jarmo Kemppainen/Jordan Bodner, NC28743KR (004770.00378), Allowance instructions, Due 07.08.2007

Sharon  
Here is the confirmation  
Please print a copy for the file and save it in iManage.  
Thanks  
Stephanie

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**From:** Patent-Agency Banner-Witcoff (EXT-RES/Washington)  
**Sent:** Thu 7/26/2007 11:43 AM  
**To:** Nokia IPR (RES/Tampere)  
**Cc:** Kemppainen Jarmo.J (Nokia/Singapore)  
**Subject:** RE: Jarmo Kemppainen/Jordan Bodner, NC28743KR (004770.00378), Allowance response

Dear Jarmo:

We have instructed the agent to proceed with payment of the fees and will forward grant upon receipt.

Best regards,

Sharon

---

**From:** Kemppainen Jarmo.J (Nokia/Singapore) [mailto:[Jarmo.J.Kemppainen@nokia.com](mailto:Jarmo.J.Kemppainen@nokia.com)]  
**Sent:** Tue 7/10/2007 10:25 PM  
**To:** Patent-Agency Banner-Witcoff (EXT-RES/Washington)  
**Cc:** APP-NOTES Itchy\_Application  
**Subject:** Jarmo Kemppainen/Jordan Bodner, NC28743KR (004770.00378), Allowance instructions, Due 07.08.2007

Dear Sharon,

Please, pay the fees.

Best regards,  
Jarmo

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**From:** Patent-Agency Banner-Witcoff (EXT-RES/Washington)[SMTP:EXT-BANNER-WITCOFF.PATENT-AGENCY@NOKIA.COM]  
**Sent:** Monday, July 09, 2007 5:26:27 PM  
**To:** Nokia IPR (RES/Tampere)  
**Subject:** Jarmo Kemppainen/Jordan Bodner, NC28743KR (004770.00378), Allowance, Due 25.08.2007  
**Auto forwarded by a Rule**

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**CLIENT COMMUNICATION- PRIVILEGED/CONFIDENTIAL**

Re: South Korean National Phase Application No. 2005-7009500

Based on: PCT application No.: PCT/IB2003/05425 filed: 24 Nov 2003 and

on US 10/307,410 filed 02 Dec 2002

Title: *Privacy Protection in a Server*

Inventor(s): PYHÄLAMMI

Foreign Associate (Y P Lee Mock & Partners) Ref No: PM05-2191PCT

Filed with claims 1-21(4 independent)

Dear Jarmo:

We are pleased to report our foreign associate has notified us regarding the readiness to grant a patent on the above-identified application. The letter indicates that fees totaling \$1,350.00 in addition to the cost for allowed claims (21) of approximately \$1,600.00 are due no later than September 7, 2007, and our foreign associate requests instructions no later than August 27, 2007. A six month extension of time is possible by paying a late fee equivalent to twice the normal fee.

Unless we hear otherwise from you by August 25, 2007, we will authorize our foreign associate to pay the requisite fees.

We look forward to receiving your instructions in due course. Should you have any questions, please do not hesitate to contact us.

Best regards,

Sharon de Mesones

International Filing Specialist

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**From:** Sharon DeMesones

**Sent:** Thursday, July 26, 2007 10:02 AM

**To:** Nokia Admin - Others

**Cc:** Bradley Wright; Josephine Lee; Jordan Bodner; Jessica Williams

07.08.2007

Please forward our reply to Nokia per usual...thanks..Sharon

Dear Jarmo:

We have instructed the agent to proceed with payment of the fees and will forward grant upon receipt.

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Sharon

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**From:** Victoria van de Veerdonk [mailto:[VvandeVeerdonk@bannerwitcoff.com](mailto:VvandeVeerdonk@bannerwitcoff.com)]

**Sent:** Wednesday, July 11, 2007 9:03 AM

**To:** Sharon DeMesones

**Cc:** Jordan Bodner; Bradley Wright; Stephanie M. Bodamer; 004770.00378.IMAN\_WDC@banneremm.com

**Subject:** Jarmo Kemppainen/Jordan Bodner, NC28743KR (004770.00378), Allowance instructions, Due 07.08.2007

Good morning. Please see e-mail below and print for the file.

Thanks.

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